TVE-DEC10 IP Video Decoder User Manual

P/N 1072583B-EN • REV 1.0 • ISS 16OCT12

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Certification

CE N4131

FCC compliance

Class B: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Contact information

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Introduction

The TruVision TVE H.264 IP video decoder converts compressed IP video streams to analog video output for display. Based on a powerful DSP and a stable embedded system design, the TVE-DEC10 decoder provides a high resolution decoding function for both live view and playback streams from Interlogix IP cameras, digital video recorders and network video recorders

This user manual provides basic information on setting up and using the TVE-DEC10 model.

The decoder browser is shipped with on-screen display (OSD) menus in English only.

Package contents

The TruVision TVE H.264 IP video decoder is shipped with the following items:

- TVE-DEC10 decoder
- Power adaptor
- Power cable
- Quick start guide
- CD (includes the user manual and TruVision Device Finder)

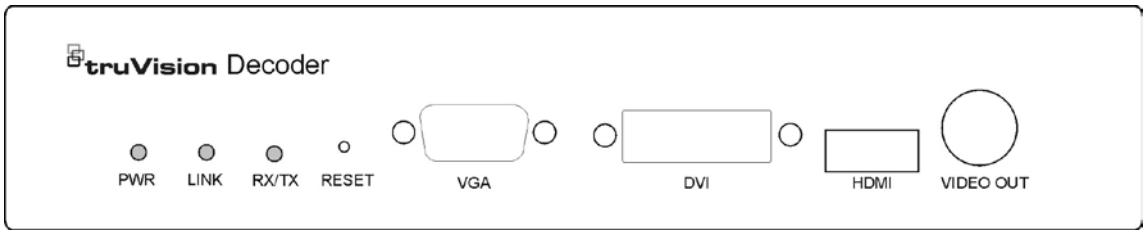
Key features

The following key features are supported by TVE decoders:

- Supports compression H.264 and MPEG4 codec
- Supports PS, RTP and proprietary encapsulation formats
- Powerful decoding capability: 1-channel video stream at 1080P resolution, 2-channel video stream at 720P resolution, or 4-channel video stream at 4CIF resolution
- Multiple video display outputs: BNC, VGA, HDMI, and DVI
- Compatible with Interlogix TruVision IP cameras and TruVision NVRs. Please check the Interlogix web site for the latest compatible device list.
- Supports PSIA communication
- Discoverable via the TruVision Device Finder

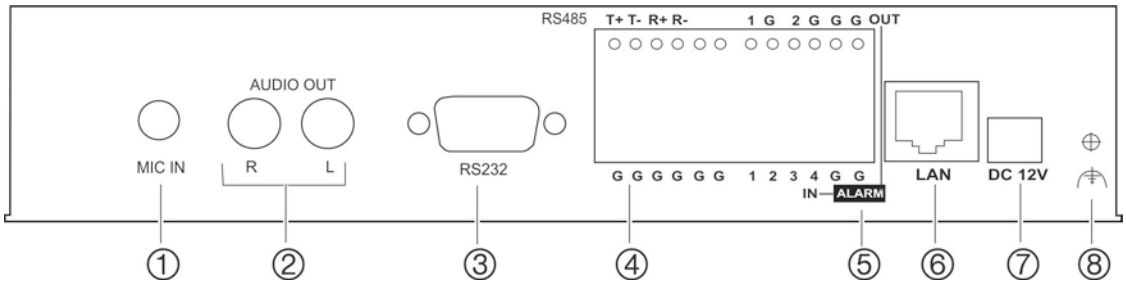
Product description

Figure 1: Front panel



LED indicator	Description
PWR	The power LED
LINK	Network connection LED
RX/TX	Data transmitting/receiving status LED
RESET	Reset to factory default settings
VGA	VGA decoding output
DVI	DVI decoding output
HDMI	HDMI decoding output
VIDEO OUT	BNC decoding output

Figure 2: Back panel



Item	Name	Description
1.	MIC In	Microphone input.
2.	Audio Out	Connect to an audio output device. R is right channel, L is left channel.
3.	RS-232	Connect to an RS-232 device, such as a computer.
4.	RS-485	Connect to RS-485 serial port.
5.	Alarm Out	Connect up to two alarm relay outputs.
	Alarm In	Connect up to four alarm relay inputs.
6.	LAN	Connect the 10M/100M/1000Mbps self-adaptive UTP Ethernet port to a network.
7.	12 VDC	Connect a 12 V power supply via a PSU.
8.	GND	Connect to ground.

Connections

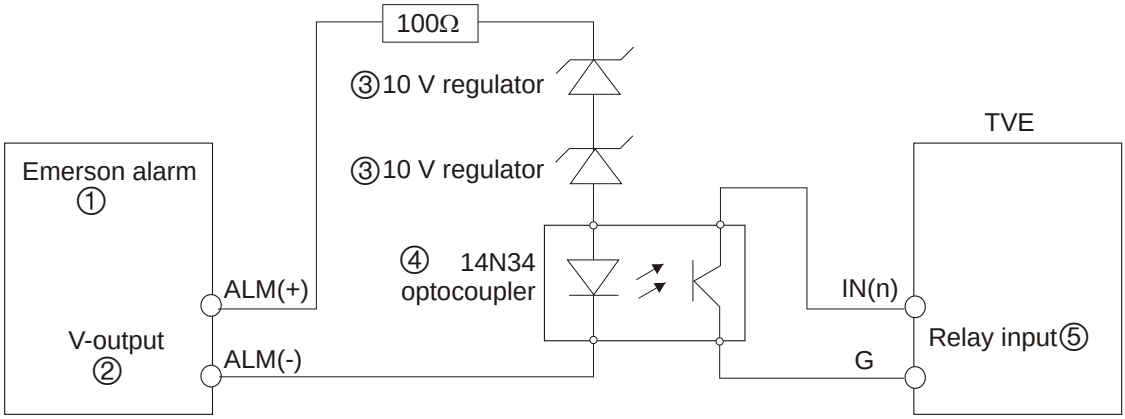
See Figure 2 on page 2 for information on connecting the power, camera, audio and network cables.

Alarm connections

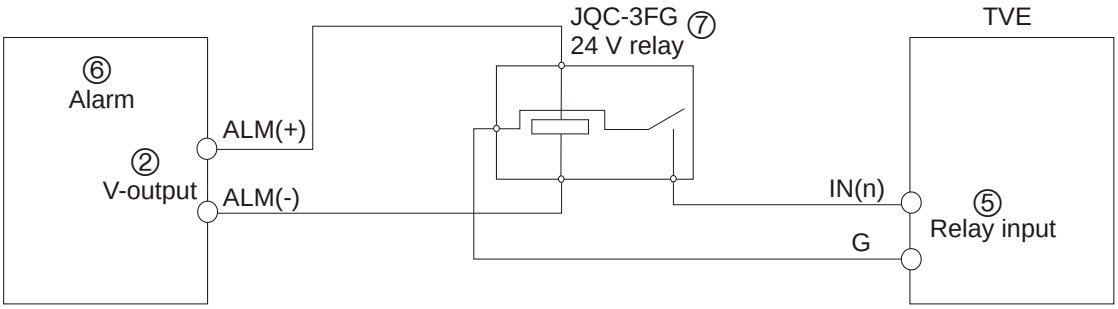
The TVE decoder supports the open/close relay input as the alarm input mode. When the alarm input signal is not in open/close relay signal mode, please follow the connections shown below:

Figure 3: Alarm input connections

Alarm input connections for Emerson alarm:



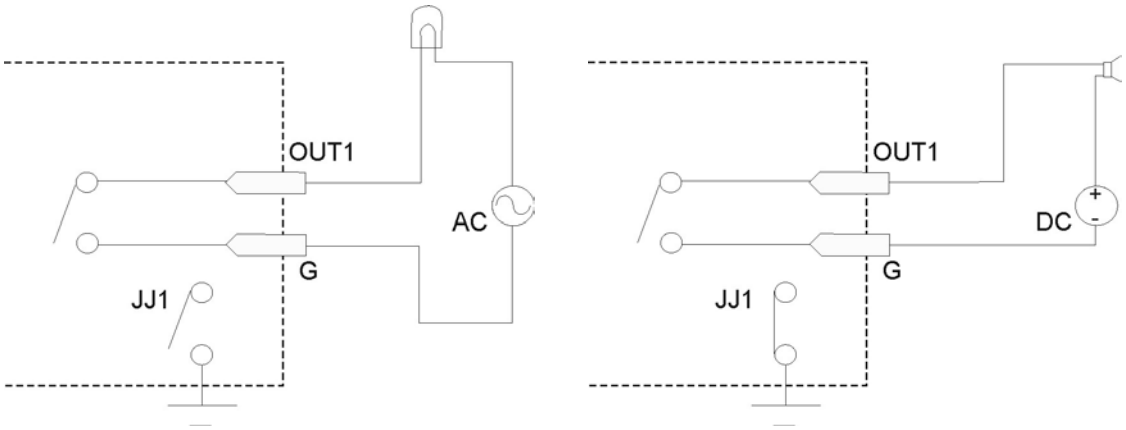
Alarm input connections for normal alarm:



1. Emerson alarm
2. V output
3. 10 V regulator
4. 4N35 optocoupler
5. Relay output
6. Normal alarm
7. JQC-3FG 24 V relay

The TVE decoder supports the open/close relay input as the alarm output mode. The alarm input can be selected to NO or NC. Different alarm output connection methods are applied to the AC or DC load. See Figure 3.

Figure 4: Alarm output connections



Note: Please note the different connections of JJ1 shown above. For a DC load, JJ1can be safely used both in NC and NO methods. It is recommended to use 12 V / 1 A. For an external AC input, JJ1 must be open. The motherboard has two jumpers, each corresponding to one alarm output. Both jumpers are factory set to be connected.

Network settings

This chapter explains how to use TruVision Device Finder to find and configure the IP address and other parameters of the device.

Note: The default user name of TVE is admin and the password is 1234. The default IP address is 192.168.1.70

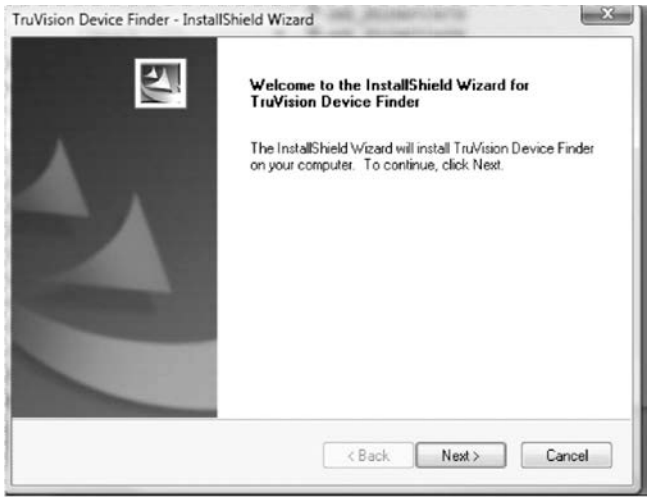
TruVision Device Finder

The TruVision Device Finder tool can be found on the CD shipped with that product.

This tool automatically identifies TruVision devices that support “auto-discovery” anywhere on the network, even in different subnets. You can view and modify the IP address of any discovered device.

To install the TruVision Device Finder:

1. Insert the CD in the computer’s CD/DVD drive.
2. Browse to the folder TruVision Device Finder and double-click the Setup file located in the folder.


TruVision Device Finder - InstallShield Wizard
Welcome to the InstallShield Wizard for TruVision Device Finder
The InstallShield Wizard will install TruVision Device Finder on your computer. To continue, click Next.
< Back
Next >
Cancel

3. Click **Next**.
4. Select the folder where setup will install the files then click **Next**.
5. The program requires a utility called WinPcap to be installed on the computer. If it is already installed, go to step 6.

   If the program is not installed, the WinPcap window appears. Follow the on-screen instructions.

6. The TruVision Device Finder Wizard appears. Click **Finish** to complete its installation.

Using the TruVision Device Finder

The setup will install the necessary files and place the following shortcut on your desktop.

Figure 5: TruVision Device Finder shortcut icon

To use the TruVision Device Finder:

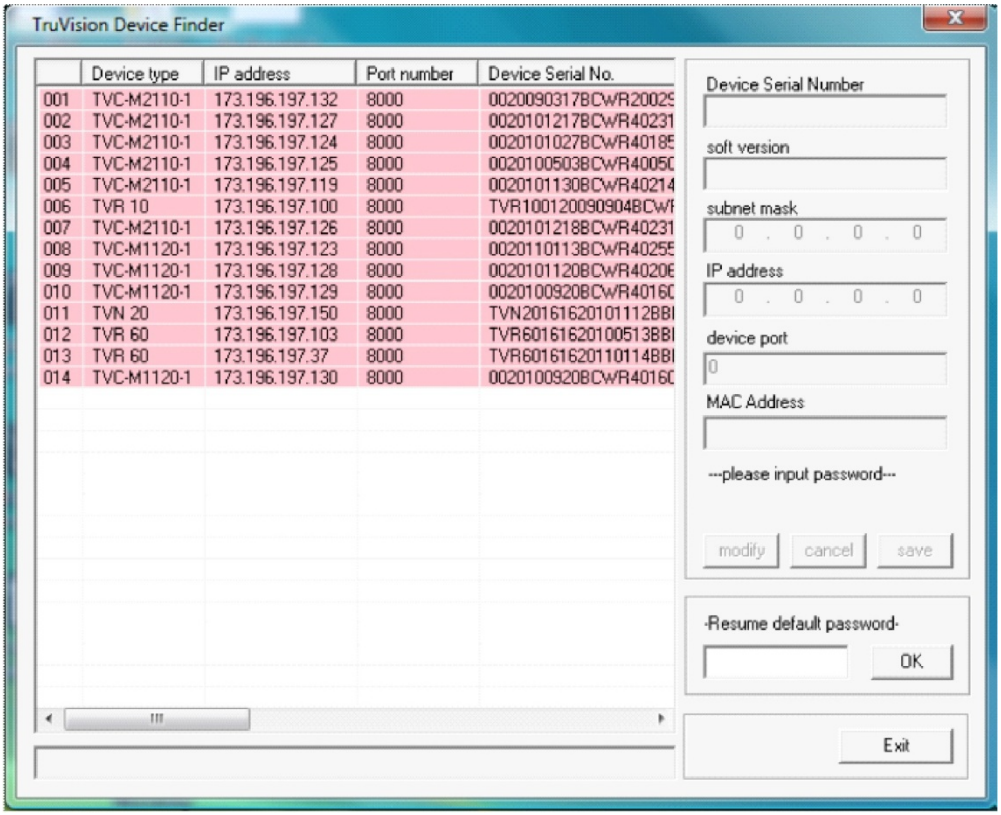
1. Double-click the shortcut icon to open the tool.

   The Start window appears.

2. Click **Start** to begin the discovery process.

   The list of TruVision devices located on your network appears.

   Note: The TruVision Device Finder can only detect devices that are on the same LAN. The tool cannot detect devices placed on a VLAN.



The tool identifies:

- Device type
- Device MAC address
- IP address
- Number of video channels supported by the device
- Connection port
- Software version
- Device serial number
- DSP/firmware version
- Device subnet mask

3. To change the IP address and/or the subnet mask of the device, click the line of the device address to be changed. The key device characteristics for that device are listed in the right pane.
4. Click **Modify** to change the IP address. The IP address and device port address fields will be available to change.
5. Change/modify the IP address and or subnet mask as required. Under Please Input Password, input the device's logon password and press **Save**.
6. Repeat this process for each device that needs to be modified. When all changes to all discovered devices is complete, press **Exit** to close the tool.

Note: You must reboot to activate the new IP address or subnet mask.

Using a web browser

You can configure the decoder over the network with a web browser. The supported web browsers include:

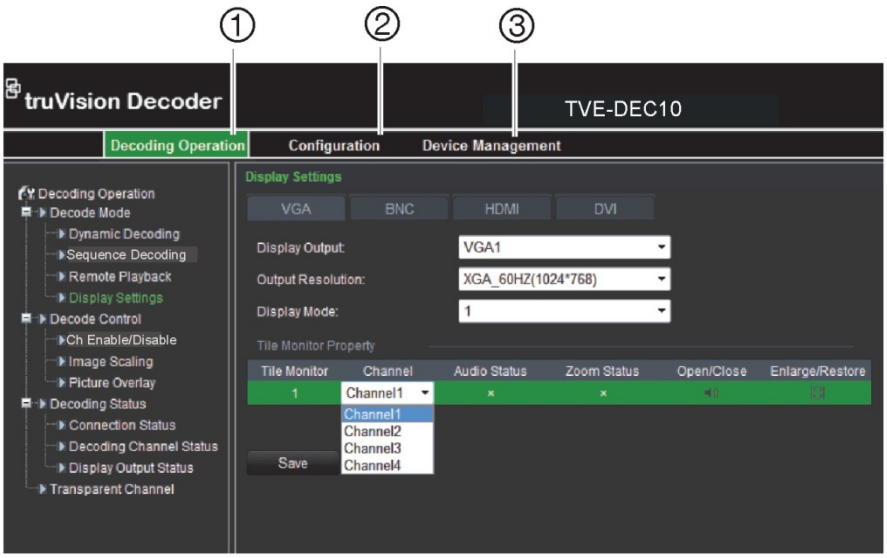
- Internet Explorer 6/7/8/9
- Firefox 3.5 and above
- Chrome 8 and above
- Safari 5.0.2 and above

Before you start

- Before accessing the browser, you need to configure the network settings of the decoder.
- Connect the decoder to the LAN, and connect a computer to the same LAN as the decoder.
- The decoder's factory default user name is admin and the password is 1234.
- The decoder's factory default IP address is 192.168.1.70.

Accessing the web browser

Figure 6: TVE decoder main page



1. **Decoding Operation**: Configures decoding resource, decoding mode and video output. See chapter "Decoder operation" on page 10.
2. **Configuration**: Configures device settings, network parameters, alarm and user account. See chapter "Configuration" on page 19.
3. **Device management**: Upgrades firmware, restores factory default settings, and reboots the decoder. See chapter "Device management" on page 26.

To access the web browser:

1. Open the web browser and enter the IP address of TVE decoder (for example, http://192.168.1.70). Press the **Enter** key on the computer.

   The system displays the login window.

2. Enter the user name (default: admin) and password (default: 1234) to log into the system. The main page of the TVE decoder appears.

3. If you need to install the TruVision Device Finder plug-in, click the center of the screen to start downloading it. All sessions of the browser must be closed during its installation.

Decoder operation

Use these menus to define how the decoder operates. There are four main submenus in the decoder menu tree. See Figure 7 below.

Figure 7: Menu tree of Decoding Operation

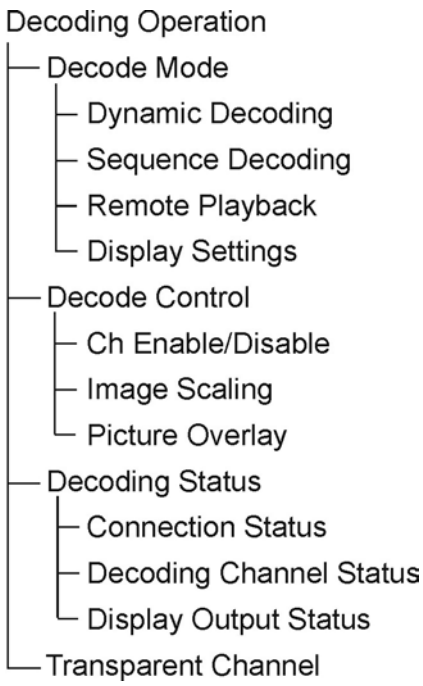


Table 1:

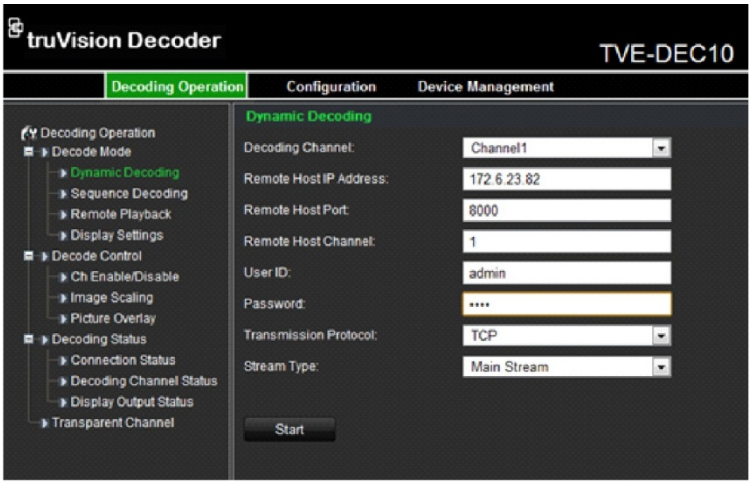
Function	Description
Decode mode	Defines the parameters for: • The channels to be decoded and their sequencing mode. • The encoder to be accessed to playback recorded files as well as the name and playback time of the recorded file. • The display channel, video format, output resolution and display mode
Decode control	Defines the parameters for enabling/disabling a decoding channel, scaling the video output image, and overlaying a picture on the image.
Decoding status	Defines the channel to be used for decoding as well as view the decoding channel's status and configuration information.
Transparent channel	Defines the parameters to transmit transparent data between the encoder and decoder.

Dynamic decoding

Use this function to set up the parameters of each channel to be decoded.

To set up dynamic decoding:

1. Click **Decoding Operation** > **Decoding Mode** > **Dynamic Decoding.** The Dynamic Decoding window appears.



2. Enter the channel parameters:

   Decoding channel: Select the decode channel

   Remote host IP address: Enter the IP address of the encoding device.

   Remote host port: Enter the port of the encoding device.

   Remote host channel: Enter the channel number of the encoding device to be decoded.

   User ID/password: Enter the user name and password used to log into the encoding device.

   Transmission protocol: Select the protocol for data transmission, either TCP or UDP.

   Stream type: Select the stream type to decode, either main stream or sub-stream.

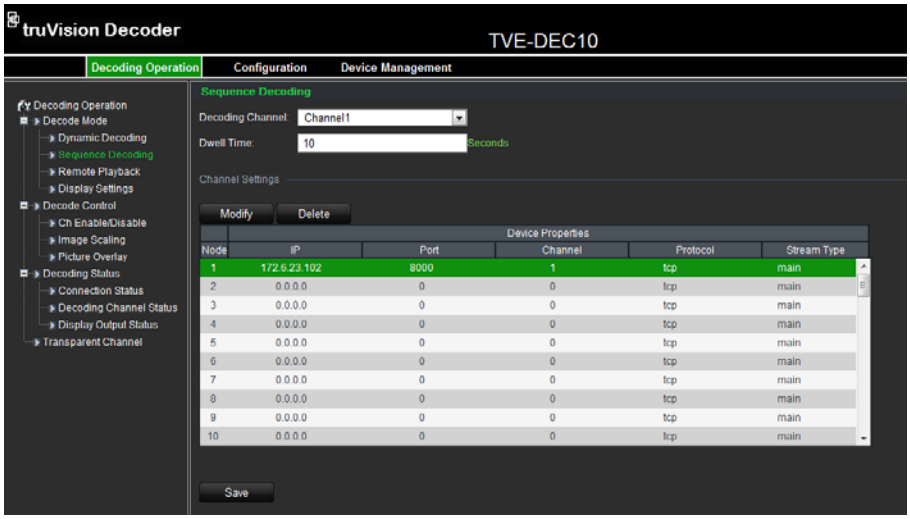
3. Click **Start** to start decoding.

Sequence mode

You set up the decoder so that the decoded images of multiple streams from a camera are automatically sequenced with a set dwell time between each image.

To set up the decoding sequence:

1. Click **Decoding Operation** > **Decode Mode** > **Sequence Decoding.** The Circular Decoding window appears.



2. Select the channel to be decoded from the **Decoding Channel** drop-down list.
3. Enter a dwell time in the **Dwell Time** box. This is the time in seconds that the image is displayed before moving on to the next one.
4. Click **Modify** to define the channel parameters. In the window enter the channel parameters:

   Remote host IP address: Enter the IP address of the encoding device.

   Remote host port: Enter the port of the encoding device.

   Remote host port: Enter the port of the encoding device.

   Remote host channel: Enter the channel number of the encoding device to be decoded.

   User ID/password: Enter the user name and password used to log into the encoding device.

   Transmission protocol: Select the protocol for data transmission, either TCP or UDP

   Stream type: Select the stream type to decode, either main stream or sub-stream.

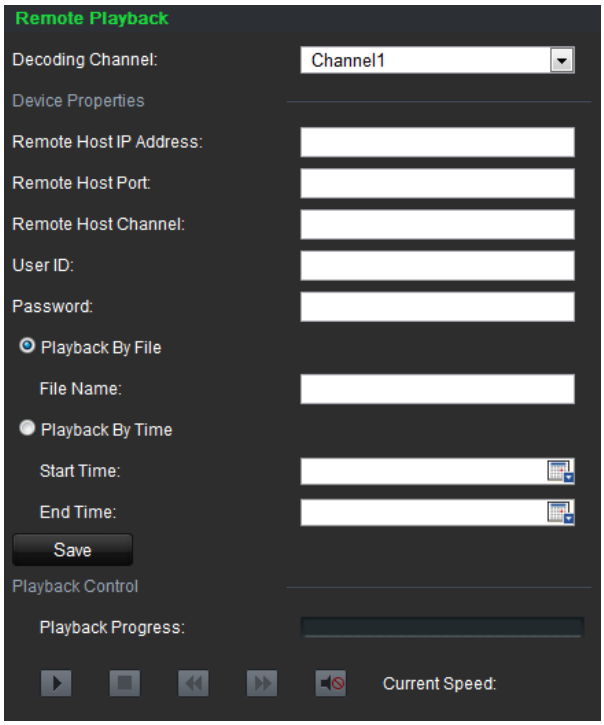
   Note: Up to 64 cameras can be decoded in sequence.
5. Click **Confirm** to save the settings and return to the previous window.

Remote playback

Use this function to remotely access the encoder to stream and decode stored files for local output. The encoder must have storage capabilities.

To set up remote playback:

1. Click **Decoding Operation** > **Decode Mode** > **Remote playback.** The Remote Playback window appears.



2. Select the channel for playback from the **Decoding Channel** drop-down list.
3. Under **Device Properties**, enter the channel parameters:

   Remote host IP address: Enter the IP address of the encoding device.

   Remote host port: Enter the port of the encoding device.

   Remote host port: Enter the port of the encoding device.

   Remote host channel: Enter the channel number of the encoding device to be decoded.

   User ID/password: Enter the user name and password used to log into the encoding device.

   Remote playback by file: Enter the file name of the file to be played back from the DVR. This is found from a search of the stored files on the DVR.

   Remote playback by time: Enter the start and end time of the file to be played back.
4. Click **Save** to save the settings.
5. Click to start playback.

   Control playback by using the buttons on the toolbar . Click to start, stop, slow forward, fast forward and turn audio on/off respectively.

   Slow forward is 1/2X, 1/4, 1/8X and 1/16X. Fast forward is 2X, 4X and 8X.

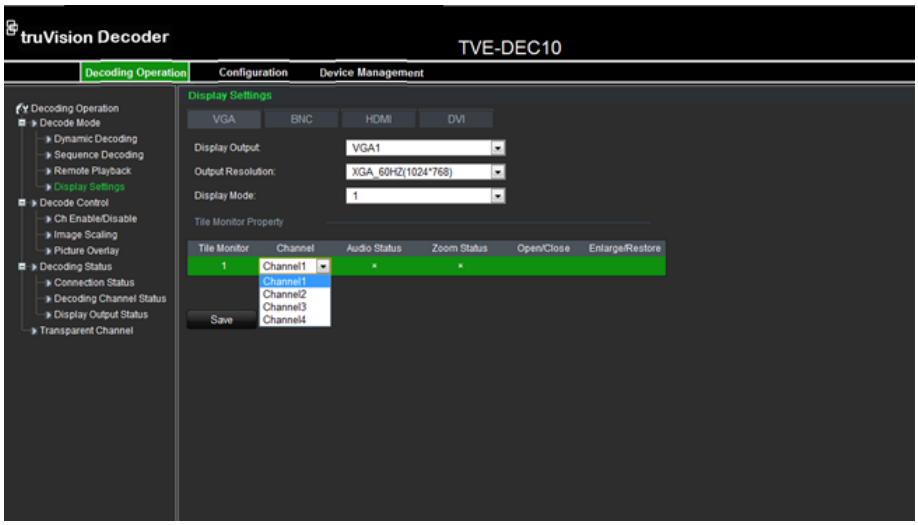
Display settings

Use this window to configure the display channel, video format, output resolution and display mode. There are 3 display modes formats; full screen, 2-screen and 4-screen.

The decoder auto detects the video mode (PAL/NTSC).

To set up the display settings:

1. Click **Decoding operation** > **Decode Mode** > **Display Settings.** The Display Settings window appears.



2. Click a button to select the **output display** required: VGA, BNC, HDMI or DVI.

   Depending on the option selected the options displayed in the monitor property window may change.

3. Select the **output resolution** from the drop-down list.
4. Select the display mode from the drop-down list.
5. Under the **Tile Monitor Property** window, select which video tile on the monitor is associated with which channel. This option depends on the output display option selected.

   Click the and icons to enable or disable audio and image scaling respectively for each channel.

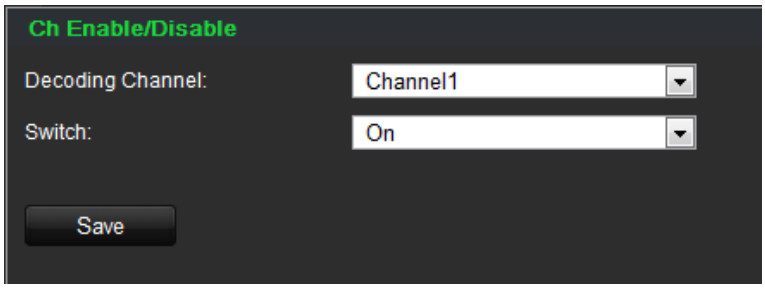
6. Click **Save** to save the settings.

Enable/disable decoding channel

Use this window to enable or disable a decoding channel. The decoding channel parameters remain unchanged.

To set up decoding sequence:

1. Click **Decoding Operation** > **Decode Control** > **Ch Enable/Disable.** The Global Switch window appears.



2. Select the desired decoding channel from the drop-down list.
3. In the Switch box, enable or disable the selected channel.
4. Click **Save** to save the settings.

Image scaling

Use this function to scale the video output image in display mode. This can avoid some parts of the video image being hidden by the monitor screen. "Stretching" is full screen mode; the image is stretched to fill the whole screen regardless of the selected resolution. With "Auto fill" the image occupies the image size of the selected resolution. The left/right or top/bottom margins may be blank on the monitor screen edges as a result.

To set up image scaling:

1. Click **Decoding Operation** > **Decode Control** > **Image Scaling.** The Image Scaling window appears.
2. Select the desired decoding channel from the drop-down list.
3. In the Image Scaling box, select **Stretching** or **Auto Fill** from the drop-down list.
4. Click **Save** to save the settings.

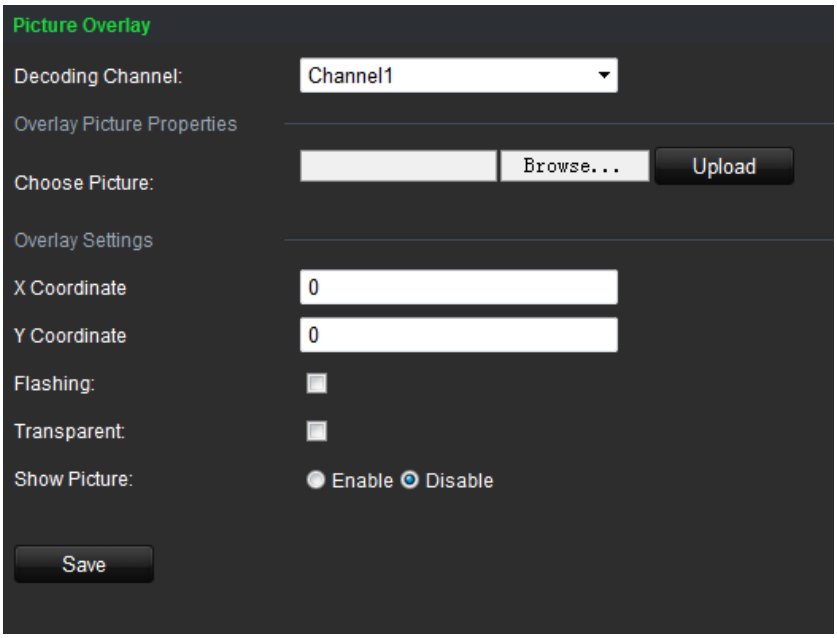
Picture overlay

Use this function to overlay a picture on a decoded channel display. The picture can be positioned anywhere on screen.

The picture must have a 32-bit BMP format. Its height and width should be 32X pixel. A resolution up to 128 x 128 is supported.

To set up picture overlay:

1. Click **Decoding Operation** > **Decode Control** > **Picture Overlay.** The Picture Overlay window appears.



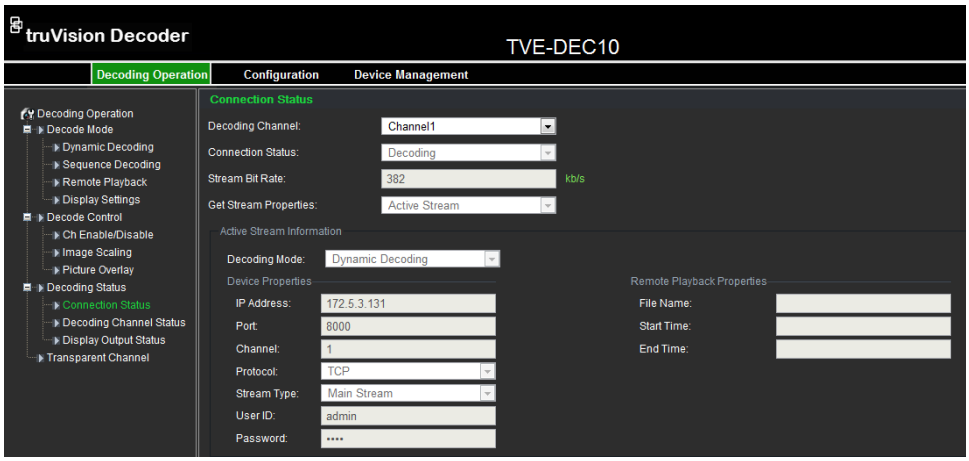
2. Select the desired decoding channel from the drop-down list.
3. In the Image Scaling box, browse the desired picture and click **Upload**.
4. Enter the X and Y co-ordinates to position the picture on screen.
5. Select how you want the picture displayed. Check Flashing or Transparent.
6. Click **Save** to save the settings.

Connection status

Use this menu to configure the channel used by the decoder for decoding and live view. The information is regularly updated automatically.

To set up the connection status:

1. Click **Decoding Operation** > **Decoding Status** > **Connection Status.** The Connection Status window appears.



2. Enter values for the following parameters:

   Decoding channel: Enter the channel to be decoded.

Connection status: Check the status of the decoding channel that is streaming video from an encoding device.

Stream bit rate: View the bit rate of the stream being decoded.

Get stream properties: The TruVision decoder can only support active mode. It actively tries to get video streams from an encoder or NVR.

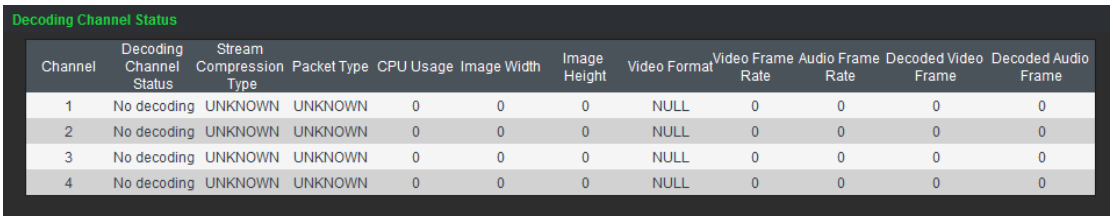
3. Click **Save** to save the settings.

Check decoding channel status

Use this menu to check the current decoding channel for such information as the channel number, decoding channel status, stream compression type and video frame rate, for example. The information is regularly updated automatically.

To view the channel status:

1. Click **Decoding Operation** > **Decoding Status** > **Decoding Channel Status.** The Decoding Channel Status window appears.

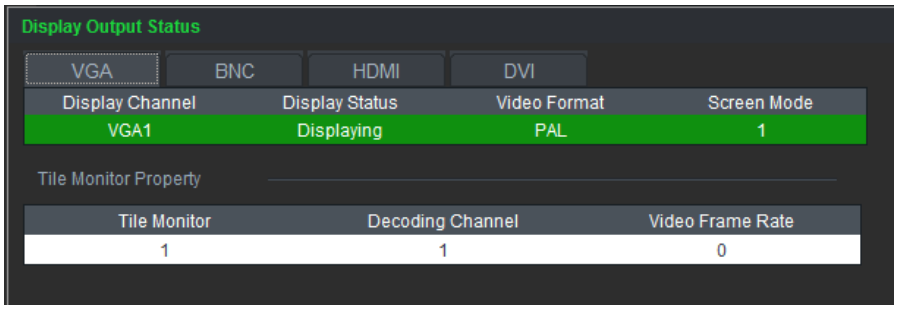

Decoding Channel Status
Channel
Decoding Channel Status
Stream Compression Type
Packet Type
CPU Usage
Image Width
Image Height
Video Format
Video Frame Rate
Audio Frame Rate
Decoded Video Frame
Decoded Audio Frame
1 No decoding UNKNOWN UNKNOWN 0 0 0 NULL 0 0 0 0
2 No decoding UNKNOWN UNKNOWN 0 0 0 NULL 0 0 0 0
3 No decoding UNKNOWN UNKNOWN 0 0 0 NULL 0 0 0 0
4 No decoding UNKNOWN UNKNOWN 0 0 0 NULL 0 0 0 0

Check display channel status

Use this menu to check the configuration information on the current channel. The information is regularly updated automatically.

To view the channel status:

1. Click **Decoding Operation** > **Decoding Status** > **Display Channel Status.** The Display Channel Status window appears.



Transparent channel

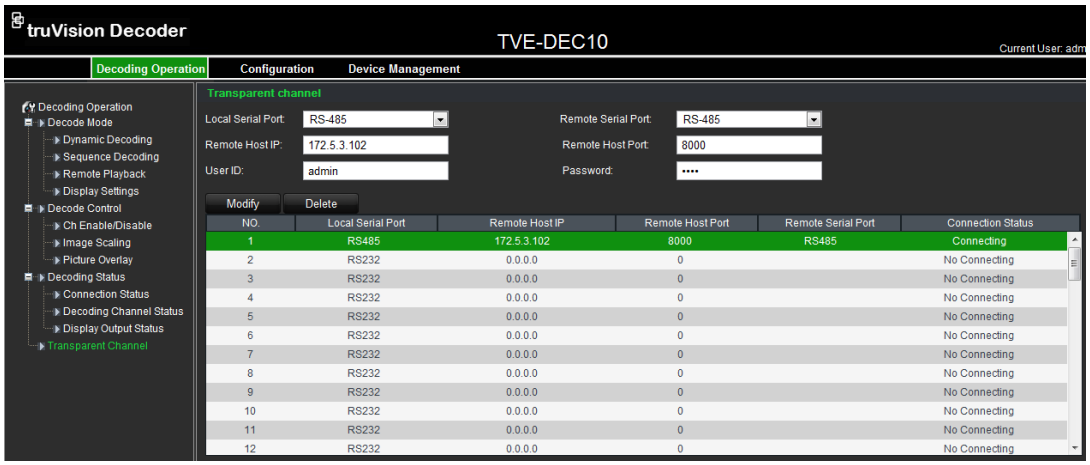
Use this menu to set up to transmit transparent data between the encoder and decoder. The decoder uses the RS-232 or RS-485 serial port to send transparent data over the network.

Up to 64 encoders can be used to address a decoder.

Note: If RS-232 is selected as the local serial port, you must set up the operation mode as transparent under Configuration > Serial Port Parameters > RS-232.

To set up the transparent channel:

1. Click **Decoding Operation** > **Transparent Channel.** The Transparent Channel window appears.



2. Enter values for the following parameters:

   Local serial port: Select the decoder's serial interface from the drop-down list: RS-232 or RS-485.

   Remote serial port: Select the remote encoding device's serial interface from the drop-down list: RS-232 or RS-485.

   Remote host IP: Enter the IP address of the remote encoding device.

   Remote host port: Enter the host port of the remote encoding device.

   User ID/password: Enter the user name and password used to log into the encoding device.

3. Click **Save** to save the settings.

Configuration

Use these menus to configure the decoder.

Figure 8: Menu tree of Configuration

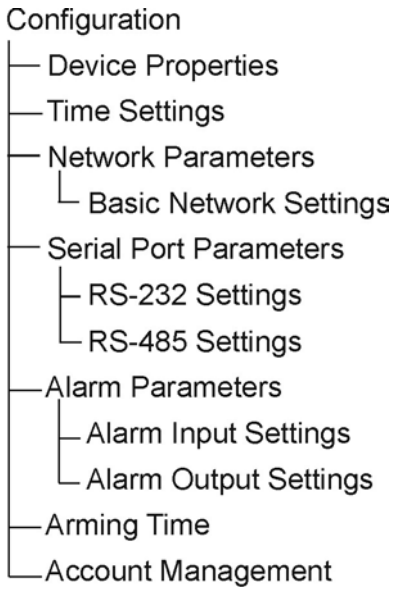


Table 2: Description of the Configuration menu tree

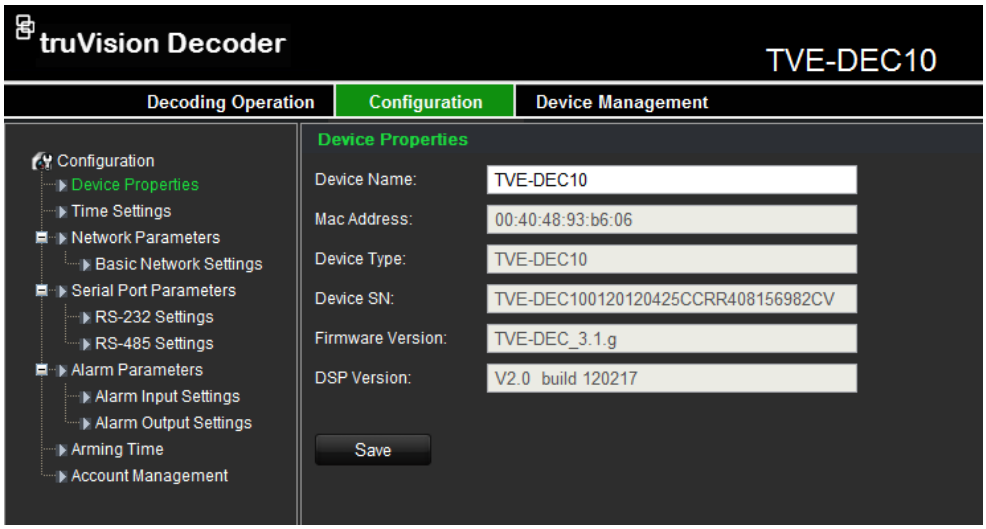
Function	Description
Device properties	Defines the decoder name. Displays the decoder serial number and firmware version.
Time settings	Defines the time used by the decoder.
Network properties	Defines the basic network settings of the decoder.
Serial port parameters	Defines the serial port settings of the decoder.
Alarm parameters	Defines the external alarm inputs/outputs and notification method.
Arming time	Schedules when alarm inputs and outputs are armed.
Account management	Creates, modifies or deletes users as well as allocates user permissions.

Device properties

You can edit the decoder name and view the decoder type and serial number as well as firmware version.

To set up the decoder properties:

1. Click **Configuration** > **Device Properties.** The Device Properties window appears.



2. Enter the device name.

   The other options are read-only:

   Mac address: View the MAC address of the decoder. It is unique and cannot be changed.

   Device type: View the decoder model name.

   Device SN: View the decoder serial number.

   Firmware version: View the firmware version number installed in the decoder.

   DSP version: View the software version number used in the DSP.

3. Click **Save** to save the settings.

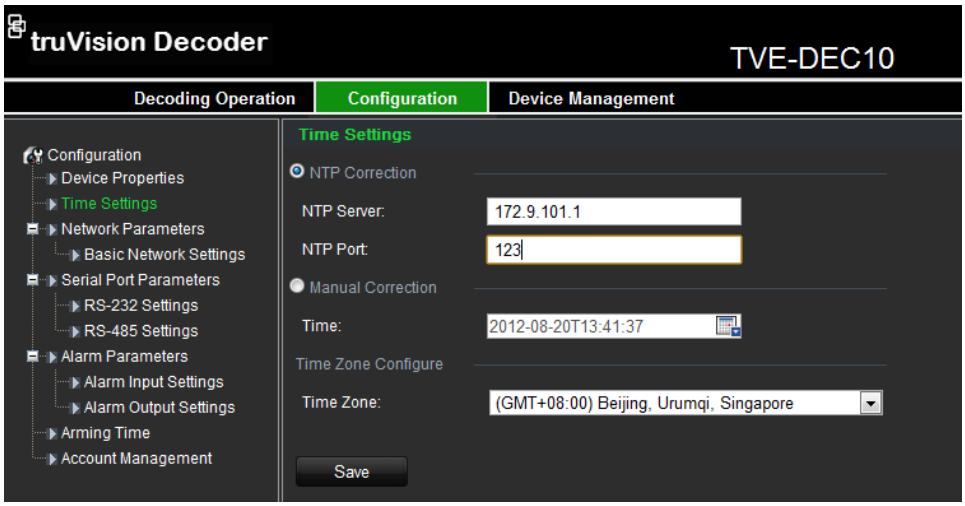
Time settings

You can set up the decoder to use a Network Time Protocol (NTP) server to keep the date and time current and accurate or manually select the local time zone.

Note: If the decoder is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44) or europe.ntp.pool.org. If the encoder is set up in a more customized network, NTP software can be used to establish a NTP server used for time synchronization.

To set up the decoder properties:

1. Click **Configuration** > **Time Settings.** The Time Settings window appears.



2. Check **NTP Correction** and enter the IP address of the NTP server and the NTP port value.

   - Or -

   Check **Manual Connection** and select the time zone that is closest to the device's location from the drop-down list.

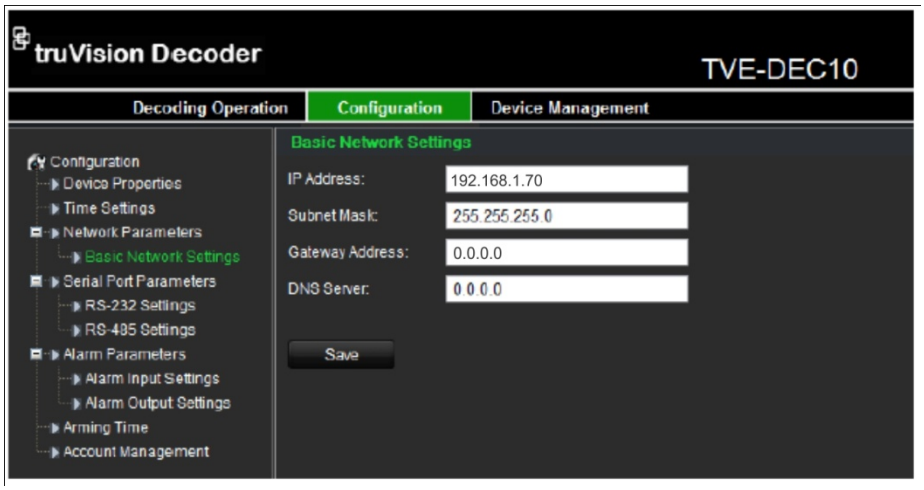
3. Click **Save** to save the settings.

Basic network settings

You must configure your decoder's network settings before using it over the network.

To configure basic settings:

1. Click the **Configuration** > **Basic Network Settings**. The Basic Network Settings window appears.



2. Enter the required values for the following options:

Option	Description
IP address	Enter the IP address for the decoder. The default IP address is 192.168.1.70.

Option	Description
Subnet mask	Enter the subnet mask for your network so the decoder will be recognized within the network. Default value is 255.255.255.0.
Gateway address	Enter the IP address of your network gateway so the decoder will be recognized within the network. This is typically the IP address of your router. Default value is 0.0.0.0.
DNS server	Enter the domain name server to use with the decoder. Default value is 0.0.0.0.

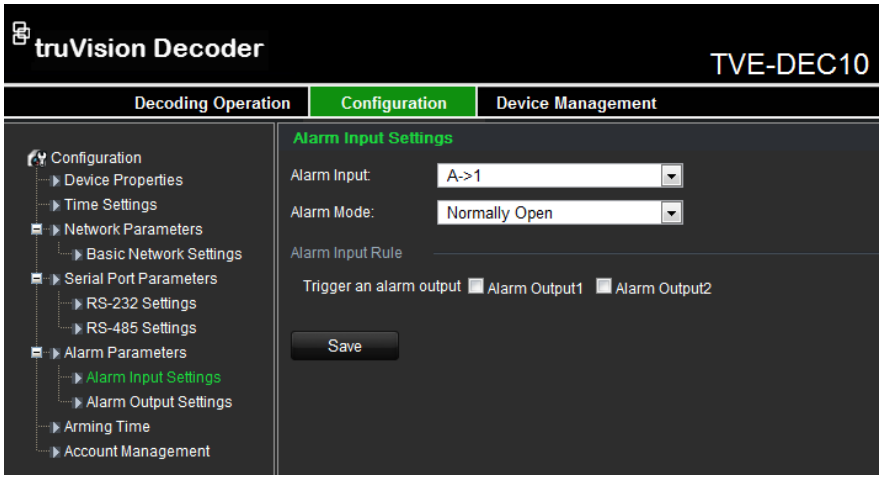
3. Click **Save** to save the settings.

Alarm input settings

The decoder can be configured on how it will respond when an alarm input is triggered by an external alarm device (for example, PIR detector, dry contacts…).

To set up alarm inputs:

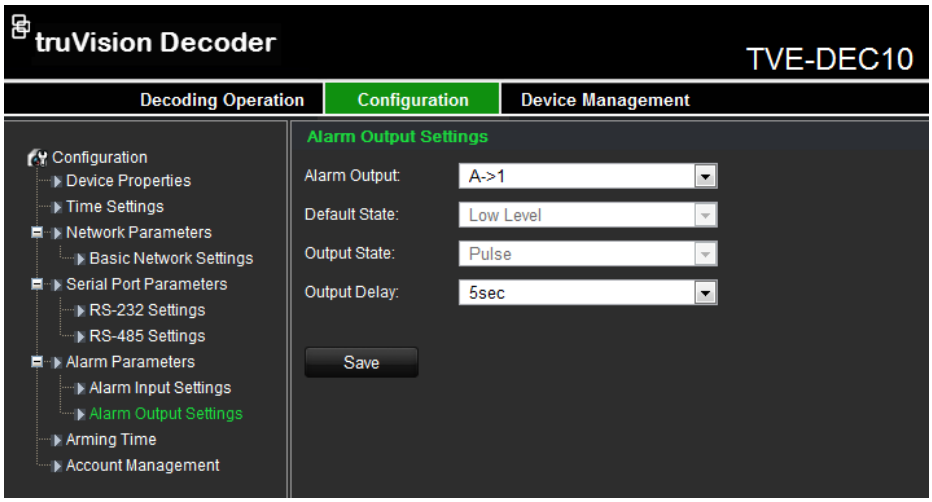
1. Click **Configuration** > **Alarm Input Settings.** The Alarm Input Settings window appears.



2. For Alarm Input, select the alarm input number of a camera.
3. For Alarm Mode, select the alarm input type: Normally Open or Normally Closed.
4. Under **Alarm Input Handling**, check one or more of the desired response methods: Alarm output 1, Alarm output 2.
5. Click **Save** to save settings.

To set up an alarm output:

1. Click **Configuration** > **Alarm Output Settings.** The Alarm Output Settings window appears.



2. Select an alarm output from the drop-down list.
3. Select a time out option from the **Output Delay** drop-down list.

   The time out setting lets you define for how long a signal remains active after the alarm has ended. Select a time out option: 5, 10, and 30 seconds, 1, 2, 5, and 10 minutes, and Manual stop. If “Manual stop” is selected, the alarm output will stop only when the alarm input is manually stopped.
4. Click **Save** to save settings.

Serial ports

Use this men u to configure the settings of the RS-232 and RS-485 ports.

To set up a serial port:

1. Click **Configuration** > **Serial Port Parameters.** The Serial Port Parameters window appears.
2. Select the required serial port from the drop-down list: RS-232 or RS-485.
3. Enter the values for the following parameters:

   RS-232 selected: Duplex mode, baud rate, data bit, stop bit, parity type, and operation mode.

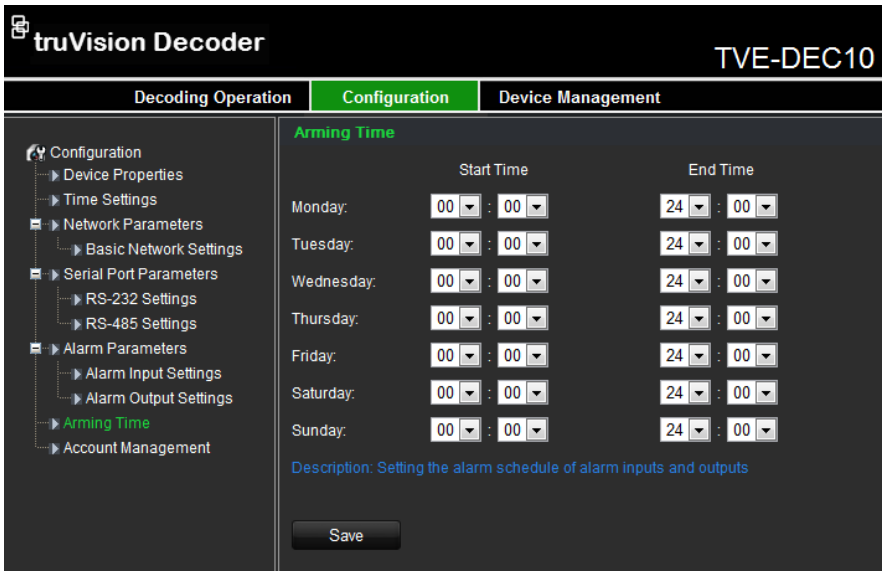
   RS-485 selected: Duplex mode, baud rate, data bit, stop bit, and parity type.
4. Click **Save** to save settings.

Arming time

You can set up to eight arming schedules for alarm inputs.

To set up the arming schedules:

1. Click **Configuration** > **Arming time.** The Arming Time window appears.



2. Select the day of the week and the start and end time periods during the day when the alarm inputs and outs are armed. You can schedule up to eight time periods in a day. Default is 24 hours.

   Note: The time periods defined cannot overlap.

3. Click **Save** to save settings.

User account management

By default the decoder comes with an administrator user account. The administrator can add, modify or delete users.

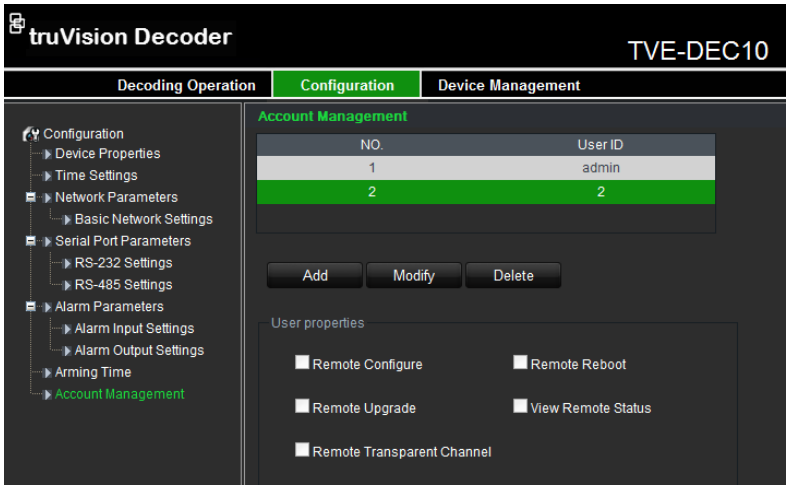
The Administrator can add, delete or configure parameters for all decoder functions. There can only be one administrator. The user name is *admin*. The name cannot be modified. The default password is 1234.

Note: Default passwords should be changed for security reasons.

To add a new user:

1. Click **Configuration** > **Account Management.** The Account Management window appears.

   Note: Only a system administrator can create a user. You can add up to 31 new users.



2. Click **Add** and enter the user name and password. Both the user name and password can have up to 16 alphanumeric characters.
3. Select the user access privileges listed under **User properties**.
4. Click **OK**.

To modify a user:

1. Click **Configuration** > **Account Management.** The Account Management window appears.

   Note: Only a system administrator can modify a user.
2. Select the desired user and click **Modify**.
3. Modify the user access privileges.
4. Click **OK**.

To delete a user:

1. Click **Configuration** > **Account Management.** The Account Management window appears.
2. Select the desired user and click **Delete**.
3. Click OK in the pop-up window to confirm deletion. The user is immediately deleted.
4. Click **OK**.

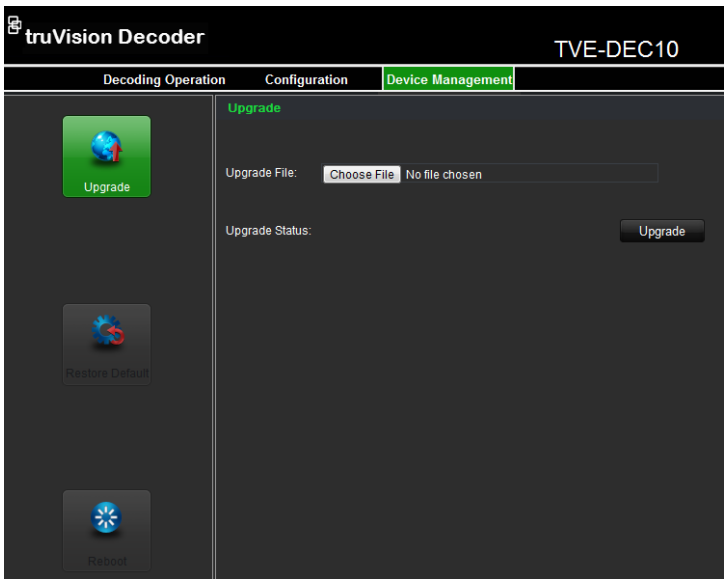
Device management

Use this window to update the decoder firmware, restore factory default settings and reboot the device.

Note: Any changes to the default passwords will be lost after a factory reset or firmware upgrade.

To update the firmware:

1. Click **Device Management** > **Upgrade.** The upgrade window appears.



2. Click **Upgrade Status** to see the current firmware version installed in the decoder
3. Under “Upgrade File”, click **Browse** to locate the upgrade file from a local back-up device. Click **Upgrade** to start importing.

To restore factory default settings:

1. Click **Device Management** > **Restore Default.** The restore default window appears.
2. Click:

   Complete to restore all factory settings including IP address and network settings.

   - Or -

   Simple to restore factory settings except for IP address and network settings.

   The default settings are restored immediately.

To restart the decoder:

1. Click **Device Management** > **Reboot**. The Reboot window appears.
2. Click **OK**. The decoder restarts.

Specifications

Model	TVE-DEC10	
Video/audio output	CVBS output	1-channel BNC output PAL: 704 × 576, NTSC: 704 × 480
	VGA output	1-channel VGA output
		Resolution: 1280×1024 / 60Hz 1280×720 / 60Hz 1280×768 / 60Hz
	HDMI output	1-channel HDMI output
		Resolution: 1080P (1920×1080) 50 & 60 Hz 1080I (1920×1080) 50 & 60 Hz 1600 × 1200) 60 Hz, (1280 × 1024) 60 Hz 1280 × 720) 60 Hz, (1024 × 768) 60 Hz
	DVI output	1-channel DVI output
		Resolution: 1080P (1920 × 1080) 50 & 60 Hz 1080I (1920 × 1080) 50 & 60 Hz 1600 × 1200) 60 Hz, (1280 × 1024) 60 Hz 1280 × 720) 60 Hz, (1024× 768) 60 Hz
	Audio output	2-channel, RCA (2.0 to 2.4 Vp-p, 600 Ω)
Video/audio decoding	IP video input	H.264 / MPEG4
	Video decoding resolution	1080P (1920 × 1080), 720P (1280 × 720) UXGA (1600 × 1200), SVGA (800 × 600) VGA (640 × 480)
	Video decoding channels	1-channel at1080P (1920 × 1080), 2-channel at 720P (1280 × 720) 4-channel at 4CIF resolution
	Multi-division display mode	1 / 2 / 4
	Frame rate	25 fps (PAL) / 30 fps (NTSC)
	Audio compression	OggVorbis
External interface	Network interface	1 RJ45 10/100/1000 Mbps Self-adaptive Ethernet interface
	Serial interface	1 RS-485 and & 1 RS-232 serial interface
	Bidirectional audio input	1-channel, RCA (2.0 to 2.4 Vp-p, 1 kΩ)
	Alarm inputs	4
	Alarm outputs	2

Model	TVE-DEC10	
General	Power supply	12 VDC
	Current	2 A max.
	Operating temperature	-10 to +55 °C (14 to 131 °F)
	Operating humidity	10% to 90%
	Dimension (W ×D × H)	198 × 123 × 39 mm (7.79 × 4.84 × 1.53 in.)
	Weight	1.5 kg (3.3 lb.)